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Lisa M. Tinnirell

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12-30-02

Date of Signature

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#2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of

DOUGLAS TRUMBULL

for:

METHOD AND APPARATUS FOR
PRODUCING DYNAMIC IMAGERY
IN A VISUAL MEDIUM

Serial No.: 10/099,662

Filed: March 14, 2002

)
) Examiner: Not Assigned
)
) Group Art Unit: 2673
)
)
)
) Our Docket No.: 5766-05
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ASSISTANT COMMISSIONER OF PATENTS
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PETITION TO MAKE SPECIAL
Pursuant to 37 CFR 1.102(d) and MPEP 708.02 (VIII)

Dear Sirs:

Applicant hereby petitions the Commissioner to designate the above-referenced application as 'Special', and to therefore expedite the examination of the above-referenced application out-of-turn. In support of this Petition to Make Special, Applicant hereby attests that the above-referenced application has yet to receive examination by the U.S. Patent Office. Further, Applicant submits the showings enumerated in MPEP 708.02(VIII), as follows:

I. Submission of the Petition to Make Special and the Fee set forth in 37 CFR 1.17(h)

Applicant hereby submits the present Petition to Make Special and, moreover, authorizes the Patent Office to charge our Deposit Account (noted below) for the fee set forth in 37 CFR 1.17(h), or any other fee which the U.S. Patent Office may deem necessary to entertain the present Petition.

II. Present All Claims Directed to a Single Invention

Applicant hereby attests that all of the claims in the above-referenced application are drawn to a single invention.

III. Statement of a Pre-Examination Search

Applicant hereby attests that a pre-examination search was conducted, generally, in classes 382, 352, 395 and 396, inclusive of all subclasses. In addition, a search was also accomplished to locate technical articles or other publications relevant to the subject matter of the above-referenced application.

IV. Submission of Most Closely Related References

Applicant hereby attests that some of the uncovered references that are believed to be most closely related to the subject matter of the above-referenced application have been previously submitted as part of the Information Disclosure Statement, dated August 5, 2002. Moreover, additional references that may be relevant to the subject matter of the above-referenced application, and which have been uncovered subsequent to the filing of the August 5, 2002 Information Disclosure Statement, are listed in a Supplemental Information Disclosure Statement, being submitted herewith in association with the contemporaneous filing of a Preliminary Amendment.

V. Detailed Discussion of the References

Applicant hereby submits a detailed discussion of the applicability of the references previously submitted on August 5, 2002, as follows:

- a) U.S. Patent 4,283,766 concerns itself with an automated motion picture camera control system which permits the derivation of intermediate camera position coordinates based upon a predetermined number of 'key' camera position coordinates. There is no discussion of combining separate images in real time to form a composite image. Moreover, there is no motivation to accomplish the generation of a composite image in the '766 patent, in contrast to the present application where the real-time integration of separate images results in near-immediate editing and thus, a reduction in re-shooting and overall production costs. U.S. Patent 4,283,766 does not, therefore, teach or suggest a method for producing a composite motion picture image by integrating a first electronically generated image and a second image, inclusive of live characters, to form a composite image, wherein the integration is accomplished in real-time as at least one of the first and the second images are being originally generated, as is explicitly claimed in the above-referenced application. Moreover, U.S. Patent 4,283,766 also does not disclose or suggest displaying said composite image in real-time as said composite image is being integrated. There is also no teaching in U.S. Patent 4,283,766 of generating the second image of the live characters by recording the live characters in front of a background screen, where the background screen is marked with a machine readable pattern, as is also explicitly claimed in the above-referenced application.
- b) U.S. Patent 5,177,516 concerns itself with a motion picture camera which utilizes a two-armed boom that is swivel mounted on a support column, the crane being capable of many configurations including enabling the lengthening of the boom arm supporting the camera platform. Thus, the '516 patent does not recognize or solve the problem addressed by the present

application. U.S. Patent 5,177,516 does not, therefore, teach or suggest a method for producing a composite motion picture image by integrating a first electronically generated image and a second image, inclusive of live characters, to form a composite image, wherein the integration is accomplished in real-time as at least one of the first and the second images are being originally generated, as is explicitly claimed in the above-referenced application. Moreover, U.S. Patent 5,177,516 also does not disclose or suggest displaying said composite image in real-time as said composite image is being integrated. There is also no teaching in U.S. Patent 5,177,516 of generating the second image of the live characters by recording the live characters in front of a background screen, where the background screen is marked with a machine readable pattern, as is also explicitly claimed in the above-referenced application.

- c) U.S. Patent 5,454,042 concerns itself with an audio-video boom for the suspension of cameras and/or a microphone, wherein the audio-video boom is capable of a wide degree of articulation while requiring only a single operator. Thus, the '042 patent does not recognize or solve the problem addressed by the present application. U.S. Patent 5,454,042 does, therefore, not teach or suggest a method for producing a composite motion picture image by integrating a first electronically generated image and a second image, inclusive of live characters, to form a composite image, wherein the integration is accomplished in real-time as at least one of the first and the second images are being originally generated, as is explicitly claimed in the above-referenced application. Moreover, U.S. Patent 5,454,042 also does not disclose or suggest displaying said composite image in real-time as said composite image is being integrated. There is also no teaching in U.S. Patent 5,454,042 of generating the second image of the live characters by recording the live characters in front of a background screen, where the background screen is marked with a machine readable pattern, as is also explicitly claimed in the above-referenced application.

- d) U.S. Patent 5,696,892 concerns itself with a system for animating a rendition of an object situated in a three-dimensional virtual world that is generated by a computer graphic system. In the '892 patent, three-dimensional data is stored relating to the surface of the object, as well as storing data relating to the time-sequenced textures of the object. These data are then combined in real-time to give the illusion of differing perspective views and animation to a virtual viewer of the combined data.

It is important to note that the '892 patent does not teach or suggest a method for producing a composite motion picture image by integrating a first electronically generated image and a second image, inclusive of live characters, to form a composite image, wherein the integration is accomplished in real-time as at least one of the first and the second images are being originally generated, as is explicitly claimed in the above-referenced application. Moreover, the '892 patent also does not disclose or suggest displaying said composite image in real-time as said composite image is being integrated. That is, the 'real-time' combination of data does not occur during the actual recordation of the images utilized to produce the three-dimensional data. Rather, the combination of the recorded three-dimensional data can only be considered 'real-time' with respect to a subsequent viewer of the virtual world as the subsequent viewer virtually changes his perceived viewpoint, not as during the combination of the images as they are being firstly recorded. There is also no teaching in the '892 patent of generating the second image of the live characters by recording the live characters in front of a background screen, where the background screen is marked with a machine readable pattern, as is also explicitly claimed in the above-referenced application.

- e) U.S. Patent 5,853,153 concerns itself with an apparatus for combining a camera float device to a camera boom to thereby enable movement of the respective camera without visual indication of the same. U.S. Patent 5,853,153 does not teach or suggest a method for producing a composite motion

picture image by integrating a first electronically generated image and a second image, inclusive of live characters, to form a composite image, wherein the integration is accomplished in real-time as at least one of the first and the second images are being originally generated, as is explicitly claimed in the above-referenced application. Moreover, U.S. Patent 5,853,153 also does not disclose or suggest displaying said composite image in real-time as said composite image is being integrated. There is also no teaching in U.S. Patent 5,853,153 of generating the second image of the live characters by recording the live characters in front of a background screen, where the background screen is marked with a machine readable pattern, as is also explicitly claimed in the above-referenced application.

- f) U.S. Patent 5,856,862 concerns itself with a crane for a boom camera that counterbalances movement of the camera by translating counter-weights in a direction opposite that of the movement of the camera. U.S. Patent 5,856,862 does not teach or suggest a method for producing a composite motion picture image by integrating a first electronically generated image and a second image, inclusive of live characters, to form a composite image, wherein the integration is accomplished in real-time as at least one of the first and the second images are being originally generated, as is explicitly claimed in the above-referenced application. Moreover, U.S. Patent 5,856,862 also does not disclose or suggest displaying said composite image in real-time as said composite image is being integrated. There is also no teaching in U.S. Patent 5,856,862 of generating the second image of the live characters by recording the live characters in front of a background screen, where the background screen is marked with a machine readable pattern, as is also explicitly claimed in the above-referenced application.
- g) The submitted article entitled, Virtual Studio System for TV Program Production, concerns itself with known chroma-key type techniques as adapted to virtual reality applications. As disclosed, the present article proposes to add camera motion effects to known chroma-key techniques in

order to provide a more realistic resultant image. As discussed on the last full paragraph of page 2, both methods disclosed in the article *"add camera motion to an image composed from shots taken with two different cameras"* through a synthesis of real performers and three-dimensional computer graphic images.

In contrast, however, to the subject matter of the above-referenced application, the methods utilized in the article do not combine the images of the real performers with computer generated images in real-time as the real performers are originally recorded, rather *"image processing prior to [emphasis added] synthesis enables [the disclosed methods] to position or relocate real performer images within the composite virtual space"*. Moreover, while the disclosed VSS-AC method does involve synthesizing separate images to form a composite image, there is notably no teaching or suggestion in the article that such a composite image is formed in real-time during the original recordation of the images, as noted previously. Also, enumerated section 4 (four) of the article explicitly recites that in the VSS-VC method, the final, composite image is not integrated in 'real-time', stating that the *"video material [that is utilized] is made up of the actual camera images of performers"*, prior to these combined images being integrated with the virtual studio set. The article further explicitly states that the disclosed methods utilize *"image processing prior to synthesis [with a virtual studio set] enabl[ing] us to position or relocate real performer images within the composite virtual space"*.

In sum, therefore, the article does not teach or suggest a method for producing a composite motion picture image by integrating a first electronically generated image and a second image, inclusive of live characters, to form a composite image, wherein the integration is accomplished in real-time as at least one of the first and the second images are being originally generated, as is explicitly claimed in the above-referenced application. Moreover, the article also does not disclose or suggest displaying said composite image in real-time as said composite image is being

integrated. There is also no teaching in the article of generating the second image of the live characters by recording the live characters in front of a background screen, where the background screen is marked with a machine readable pattern, as is also explicitly claimed in the above-referenced application.

Applicant hereby submits a detailed discussion of the applicability of the references submitted in association with the Supplemental Information Disclosure Statement, as follows:

- h) U.S. Patent 5,566,251 concerns itself with deriving a composite video image by merging foreground and background video images from a plurality of separate video signal sources. A pattern-key insertion technique is utilized for this purpose. As can be seen in Figure 2, the '251 patent utilizes a video switch (212), thus Applicant asserts that the '251 patent does not teach or suggest a method for producing a composite motion picture image by integrating a first electronically generated image and a second image, inclusive of live characters, to form a composite image, wherein the integration is accomplished in real-time as at least one of the first and the second images are being originally generated, and displayed in real-time, as is explicitly claimed in the above-referenced application. Moreover, the '251 patent does not teach generating the second image of the live characters by recording the live characters in front of a background screen, where the background screen is marked with a machine readable pattern, as is also explicitly claimed in the above-referenced application.
- i) U.S. Patent 5,892,554 concerns itself with inserting static or dynamic images in a live television broadcast utilizing landmark designations. Noticeably absent from the '554 patent is any teaching or suggestion of generating the second image of the live characters by recording the live characters in front of a background screen, where the background screen is marked with a machine

readable pattern, as is also explicitly claimed in the above-referenced application.

- j) U.S. Patent 5,923,791 concerns itself with deriving a composite video image by merging foreground and background video images from a plurality of separate video signal sources. A pattern-key insertion technique is utilized for this purpose. Similar to U.S. Patent 5,566,251 noted above, the '791 patent utilizes a video switch (212) to vacillate between competing images, thus Applicant asserts that the '791 patent does not teach or suggest a method for producing a composite motion picture image by integrating a first electronically generated image and a second image, inclusive of live characters, to form a composite image, wherein the integration is accomplished in real-time as at least one of the first and the second images are being originally generated, and displayed in real-time, as is explicitly claimed in the above-referenced application. Moreover, the '791 patent does not teach generating the second image of the live characters by recording the live characters in front of a background screen, where the background screen is marked with a machine readable pattern, as is also explicitly claimed in the above-referenced application.
- k) U.S. Patent 6,084,590 concerns itself with a media production system which utilizes two-dimensional images of physical objects that are analyzed and choreographed to create three-dimensional representations of the physical objects in a virtual stage. A composite display may be selectively utilized, but the composite images are not integrated in real-time. That is, U.S. Patent 6,084,590 does not teach or suggest a method for producing a composite motion picture image by integrating a first electronically generated image and a second image, inclusive of live characters, to form a composite image, wherein the integration is accomplished in real-time as at least one of the first and the second images are being originally generated, and displayed in real-time, as is explicitly claimed in the above-referenced application. Moreover, the '590 patent does not teach generating the second image of the live

characters by recording the live characters in front of a background screen, where the background screen is marked with a machine readable pattern, as is also explicitly claimed in the above-referenced application.

- l) U.S. Patent 6,084,590 concerns itself with a chromakeying system for the production of a composite image, including a chromakey panel having a pattern thereon. In contrast, however, with the claims of the above-referenced application, the pattern on the chromakey panel is merely two differing shades within the chromakeying spectrum, whereby distortions of the pattern (due to zooming or the like of the imaging camera) may be detected and applied to a virtual background. That is, U.S. Patent 6,084,590 does not teach or suggest, at least, generating the second image of the live characters by recording the live characters in front of a background screen, where the background screen is marked with super-imposed horizontal and vertical bar codes, the bar codes being indicative of the spatial orientation of the camera, as is explicitly claimed in the above-referenced application.

CONCLUSION

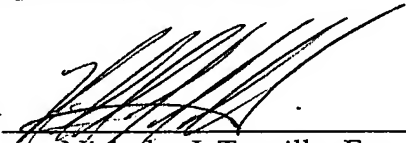
Applicant hereby requests that the present Petition to Make Special be granted and that the above-referenced application be taken up out of turn for immediate examination, pursuant to MPEP 708.02(VIII). A Preliminary Amendment and a Supplemental Information Disclosure Statement is also being submitted herewith.

Further, Applicant respectfully requests that the Examiner contact Applicant's Representative, noted below, in the advent that the Examiner believe that there remains any outstanding issues which would prevent the granting of this Petition to Make Special, in order to expedite a resolution of the same.

Please charge our Deposit Account No. 13-0235 for the fee set forth in 37 CFR 1.17(h), or any other fee that the U.S. Patent Office may deem necessary to entertain the present Petition.

Respectfully submitted,

By



Nicholas J. Tuccillo, Esq.
Registration No. 44,322
Attorney for Applicant(s)

McCORMICK, PAULDING & HUBER LLP
CityPlace II, 185 Asylum Street
Hartford, CT 06103-4102
Tel: (860) 549-5290
Fax: (413) 733-4543